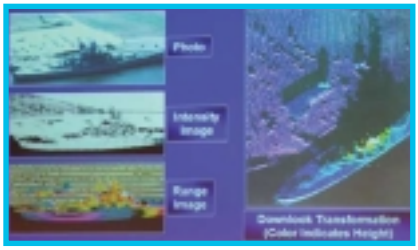
LADAR seeker cost-cut 22% on production



Lockheed Martin has completed two aggressive cost reduction workshops for the Non Line-of-Sight - Launch System (NLOS-LS) and Loitering Attack Missile (LAM). These resulted in a reduction of assembly time of the current system design and development baseline configuration from 21.4hrs to 1.6hrs, more than 90%. LAM's LADAR seeker cost was cut by 22%.

The LAM is among several products awarded in 2003 to NetFires LLC, comprising Lockheed Martin and Raytheon Co. Products under development by the LLC include a Precision Attack Missile (PAM) and an autonomous Container Launch Unit (CLU).

The workshops were a cooperative effort between Lockheed Martin and its Army customer, and involved elements of Lockheed Martin's manufacturing, engineering, QM and production operations.

"Our goal is to provide a highly effective and affordable weapon system to our soldiers," said Rick Edwards, VP of Tactical Missiles at Lockheed Martin Missiles & FireControl.

"The team's challenge was to dramatically reduce costs. Working with our customer, we broke old paradigms and applied forward-thinking solutions to address future austere budgets, while still meeting the warfighter's requirements."

Plans include establishment of a pilot production line in Troy and Ocala. The SDD effort will include engineering integration, test and limited production. Full-rate production is to continue through 2020, and involve as many as 70 jobs at the Troy facility.

"We are redesigning the missile body so that assembly is quick and easy," said Glenn Kuller, Netted Fires director at Lockheed Martin Missiles and Fire Control. "We also leveraged advanced prototyping techniques from the Lockheed Martin 'Skunk Works' for the Affordability Workshops."

"We took a very good design, and reviewed it at just the right time," said Steve Ericson, senior manager from Lockheed Martin Aeronautics 'Skunk Works' Advanced Development Program facility in Palmdale, CA. "The LAM's square airframe allows for flexibility in packaging and plenty of volume, for easier assembly & integration."

The LAM is an integral part of the Army's Future Combat Systems. The LAM and its LADAR seeker have been successfully demonstrated under previous DARPA NetFires and US Air Force's Low-Cost Autonomous Attack System programs. It will be interoperable with the current and future force. LAM's LADAR seeker provides 3D analysis of potential targets. The LAM vehicle is 62" long, weighs 117lbs, and can search a wide area or loiter 30 mins at a range of 70kms. Two-way data links on the LAM will provide for re-tasking while in-flight and down-linking of images.

Picolight gets additional $14.5m

Designer and manufacturer of optical transceivers and components, Piccolight, has completed a $27.5m funding effort, with the addition of $14.5m in a combination of new equity investment and debt financing.

Investor Growth Capital, a new investor, completed the second closing with a $7m equity investment, joined by ORIX Venture Finance, which provided an additional $7.5m in debt financing.

Investor Growth Capital joins BA Venture Partners, Vesbridge Partners and Coral Capital Management, previous investors who invested $13m in the first close of the round.

Picolight will use the funds to expand operations, and scale manufacturing to meet customer demand, and extend its 1310nm VCSEL products from 4Gb fibre channel to 10Gb Ethernet at long-reach over single-mode fiber.

Picolight's revenues and bookings for the past year doubled year-over-year. Steve Hane, president and CEO said,

"This funding round will take us well past our financial break-even goal as we continue to strongly support customers with the best products to help move their business forward."

"Picolight has demonstrated strong momentum with increased revenues and customer traction and is a proven market leader in VCSEL technology and data communications applications for the enterprise, storage area and metro area networks," said Albert Kim, Investor Growth Capital, who joins Picolight's board of directors. "Picolight's VCSEL technology expertise and product development in the optical marketplace are key attributes."

Alfalight gets $1.4m for diode development

Alfalight Inc has been awarded $1.4m funding for Phase II of the Super High Efficiency Diode Sources (SHED)program, sponsored by DARPA. The project goal is to increase a laser's power conversion efficiency - and lower the ambient heat emitted from a laser during operation. Efficiency increases would allow increases in laser power and energy savings, applications ranging from communications to metal cutting, according to the company.

The Phase II award follows Alfalight's completion of Phase I, in which the company developed working diode lasers that surpassed the targeted 65% efficiency.

This phase will allow Alphalight to continue making improvements to power conversion efficiency (PCE) of pump laser diodes and develop high-efficiency, high-power diode laser stacks.

High PCE laser diodes are a key components for high-power laser systems, amplifiers, and industrial lasers, allowing higher output power with less waste heat.

Typical lasers on the market operate at 50-60% efficiency, the current goal being to get about 10 points or more beyond that range.

Real applications of the newer laser technology could make it to market early next year, with high-power diode laser stacks arriving in eighteen months.

The SHED program results were highlighted at DARPA Tech 2005 in Anaheim, CA, in August and Alfalight's latest results will be presented at the *International Congress on Applications of Lasers & Electro-Optics* in Miami in November.